Enseco
A CORNING Company

OCT 25, 1991

Mr. Bob Poole
S & D Engineering Inc.
2 Gourmet Lane
Edison, New Jersey 08837

Dear Mr. Poole:

Enclosed are the results of the analyses performed on the three soil samples from Ideal Cooperage Project (Enseco-East Project No. 16969). These samples were received under chain of custody at Enseco-East Laboratory on October 11, 1991. A brief description of the Quality Assurance/Quality Control and method references employed by Enseco is contained within the report. This letter authorizes the release of the analytical results and should be considered an integral part of this report.

Please refer to this project by the Enseco-East Laboratory Project Number to help expedite any future discussions. We will be happy to answer any questions or concerns that you may have.

Sincerely,

ENSECO-EAST LABORATORY

Diane Komar

Diane Komar
Program Administrator

Enc.
rg

Enseco Incorporated
2200 Cottontail Lane
Somerset, New Jersey 08875
201/469-5800 Fax: 201/469-7516

QUALITY ASSURANCE/QUALITY CONTROL

To ensure data quality, an extensive QA/QC program has been implemented at Enseco-East which incorporates the following controls (as applicable).

Reagent or analytical blanks are analyzed to assess the level of contamination which exists in the analytical system. An analytical blank, analyzed with every batch of samples, consists of reagents specific to the method. This blank is carried through every aspect of the procedure, including preparation, cleanup, and analysis. Ideally, the concentration of an analyte in the blank is below the reporting limit for that analyte. However, some common laboratory solvents and metals are difficult to eliminate to the part-per-billion levels commonly reported in environmental analyses.

Duplicate Control Samples (DCS) are used to monitor the laboratory's day-to-day performance of routine analytical methods. A DCS consists of a standard, control matrix which is spiked with a group of target compounds representative of the method analytes. The DCS is analyzed with environmental samples to provide evidence that the laboratory is performing the method within accepted QC guidelines.

A DCS has been established for most routine analytical methods. Reagent water is used as the control matrix for the analysis of aqueous samples. The DCS compounds are spiked into reagent water and carried through the appropriate steps of the analysis. As stated in SW-846 (third edition), a universal blank matrix does not exist for solid samples and therefore no matrix is used. The DCS for solid samples consists of the appropriate steps of the analysis. The data thus obtained are used to set the DCS control limits. The control limits for accuracy are based on the historical average recovery of the DCS plus or minus three standard deviation units. The control limits for precision are based on the historical relative percent difference (RPD) and range from zero (no difference between duplicate samples) to the average RPD plus three standard deviation units.

Surrogates are organic compounds that are similar to the analytes of interest in chemical behavior but which are not normally found in environmental samples. Surrogates are routinely added to samples requiring GC/MS analysis to monitor the effect of the matrix on the accuracy of the analysis. Results are reported in terms of percent recovery.

ANALYTICAL RESULTS

The method number provided on each data report sheet refers to a publication originating from a regulatory or standard-setting organization. In general, the methods employed are those specified by the U.S. Environmental Protection Agency and other state and federal agencies. In cases where an approved regulatory method does not exist, a method developed by Enseco will be employed to meet the specific needs of the client. The methods commonly employed by Enseco are based on methods from the following references.

U.S. Environmental Protection Agency. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020. Cincinnati, OH, March 1983.

U.S. Environmental Protection Agency. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. (SW-846); Washington, D.C. November 1986.

U.S. Environmental Protection Agency Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. Cincinnati, OH, September 1986.

Guidelines Establishing Test Procedures for the analysis of Pollutants Under the Clean Water Act, 40 CFR, Part 136; Federal Register, (1984).

American Public Health Association, American Water Works Association, Water Pollution Control Federation. Standard Methods for the Examination of Water and Wastewater, 16th edition. Washington, D.C., April 1985.

EPA Contract Laboratory Program (CLP) protocols for the analysis of organic and inorganic hazardous substances.

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SAMPLE DESCRIPTION INFORMATION
for
S & D Engineering Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
016969-0001-SA	674-T4-1A	SOIL	11 OCT 91	11:30	11 OCT 91
016969-0002-SA	674-T4-1B	SOIL	11 OCT 91	11:30	11 OCT 91
016969-0003-SA	674-T4-1C	SOIL	11 OCT 91	11:30	11 OCT 91

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Total Metals

Client Name: S & D Engineering Inc.
Client ID: 674-T4-1A
Lab ID: 016969-0001-SA
Matrix: SOIL Sampled: 11 OCT 91 Received: 11 OCT 91
Authorized: 11 OCT 91 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Mercury	292	mg/kg	34.3	245.5 CLP-M	18 OCT 91	18 OCT 91

Percent Moisture is 20%. All results and limits are reported on a dry weight basis.

ND = Not detected
NA = Not applicable

Reported By: Nick Rundella Approved By: Joasia Przyluska

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Total Metals

Client Name: S & D Engineering Inc.
Client ID: 674-T4-1B
Lab ID: 016969-0002-SA
Matrix: SOIL Sampled: 11 OCT 91 Received: 11 OCT 91
Authorized: 11 OCT 91 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Mercury	28.5	mg/kg	2.2	245.5 CLP-M	18 OCT 91	18 OCT 91

Percent Moisture is 38%. All results and limits are reported on a dry weight basis.

ND = Not detected
NA = Not applicable

Reported By: Nick Rundella Approved By: Joasia Przyluska

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Client Name: S & D Engineering Inc.
Client ID: 674-T4-1C
Lab ID: 016969-0003-SA
Matrix: SOIL Sampled: 11 OCT 91 Received: 11 OCT 91
Authorized: 11 OCT 91 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Mercury	113	mg/kg	17.2	245.5 CLP-M	18 OCT 91	18 OCT 91

Percent Moisture is 20%. All results and limits are reported on a dry weight basis.

ND = Not detected
NA = Not applicable

Reported By: Nick Rundella Approved By: Joasia Przyluska

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QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
016969-0001-SA	SOIL	HG-CVAA-S	17 OCT 91-C	17 OCT 91-C
016969-0002-SA	SOIL	HG-CVAA-S	17 OCT 91-C	17 OCT 91-C
016969-0003-SA	SOIL	HG-CVAA-S	17 OCT 91-C	17 OCT 91-C

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

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Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limits
Category: HG-CVAA-S Matrix: SOIL QC Lot: 17 OCT 91-C Concentration Units: mg/kg								
Mercury	4.7	4.48	4.70	4.59	98	60-174	4.8	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

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Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-SD			
Matrix: SOIL			
QC Lot: 17 OCT 91-C QC Run: 17 OCT 91-C			
Mercury	ND	mg/kg	0.10

CHAIN-OF-CUSTODY RECORD

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PAGE 1 OF 1

SAMPLER: (Signature) Peter DiTrapani, Jr.		DATE SHIPPED 10-11-91	CARRIER HAND-DELIVERED
PHONE 908-225-6116	AIRBILL NO. NA	CUSTODY SEAL NO'S 33417, 33526	COOLER NO. NA

SHIP TO:

- ENSECO EAST, 2200 Cottontail Lane, Somerset, NJ 08873 — ☒
- CALIFORNIA ANALYTICAL LAB, 2544 Industrial Blvd, West Sacramento, CA 95691 — ☐
- ERCO LAB, 205 Alewife Brook Pkwy, Cambridge, MA 02138 — ☐
- ENSECO MARBLEHEAD, Doaks Lane at Little Harbor, Marblehead, MA 01945 — ☐

SEND RESULTS TO

CLIENT NAME	S & D ENVIRONMENTAL INC.
COMPANY	2 GOURMET LANE
ADDRESS	EDISON, NJ 08837
CONTACT:	ED TWILLEY
PHONE NO.	908-549-8778

PROJECT NAME IDEAL COOPERAGE	PROJECT NO. 674	P.O. NO.

RELINQUISHED BY (Signature) Peter DiTrapani, Jr.	RECEIVED BY (Signature) Suzanne Main Enseco East	DATE 10/11/91	TIME 1910
RELINQUISHED BY (Signature)	RECEIVED BY (Signature)	DATE	TIME
RELINQUISHED BY (Signature)	RECEIVED AT LAB BY (Signature)	DATE	TIME
RELINQUISHED FROM LAB BY (Signature)	RECEIVED BY (Signature)	DATE	TIME

ANALYSIS REQUEST

	SAMPLE ID NO.	SAMPLE DESCRIPTION	DATE / TIME SAMPLED	ANALYSIS REQUESTED	SAMPLE CONDITION UPON RECEIPT
1	674-T4-1A	8 oz. SOIL	10-11-91 / 1130	TOTAL MERCURY	
2	674-T4-1B	8 oz. SOIL	10-11-91 / 1130	TOTAL MERCURY	
3	674-T4-1C	8 oz. SOIL	10-11-91 / 1130	TOTAL MERCURY	Good 10/14/91

SPECIAL INSTRUCTIONS / COMMENTS:

NOTE: UNUSED PORTIONS OF NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT.

EXPECTED ANALYTICAL T.A.T.'S			
	Immediate Attention (200% Surcharge)	RUSH (50-100% Surcharge)	X Standard

ENSECO EAST LOG NUMBER (lab use only) 169169

ENS—1045-B

Client Retains White Copy Only